

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* HASSAN CHAOUK  
and BRUKTAWIT T. ASFAW

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Appeal 2006-3116  
Application 10/809,140  
Technology Center 1700

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Decided: September 27, 2006

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Before GARRIS, PAK, and WARREN, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the decision of the Examiner finally rejecting claims 1 through 8, all of the claims in the application. Claims 9 through 12 are also of record and have been withdrawn from consideration by the Examiner under 37 C.F.R. § 1.142(b).

Claim 1 illustrates Appellants' invention of a method for forming a hydrogel string, and is representative of the claims on appeal:

1. A method for forming a hydrogel string comprising the steps:

providing a delivery device having a gelation chamber;  
providing a prepolymer composition that will form a hydrogel when brought into contact with a gelation initiator;  
contacting the prepolymer with the gelation initiator in the gelation chamber so that it forms a hydrogel in the gelation chamber; and  
extruding the hydrogel from the delivery device as a hydrogel string.

The references relied on by the Examiner are:<sup>1</sup>

Tanabe	US 5,443,454	Aug. 22, 1995
Sawhney	US 6,152,943	Nov. 28, 2000

The Examiner has rejected appealed claims 1 through 8 under 35 U.S.C. § 103(a) as being unpatentable over Sawhney in view of Tanabe (Answer 3-4).

Appellants state that “[t]he claims stand or fall together” (Br. 2). Thus, we decide this appeal based on representative appealed claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2005).

We affirm.

We refer to the Answer and to the Brief for a complete exposition of the positions advanced by the Examiner and Appellants.

#### OPINION

We have carefully reviewed the record on this appeal and based thereon agree with the supported position advanced by the Examiner that, prima facie, the claimed method for forming a hydrogel string encompassed by appealed claim 1 would have been obvious over the combined teachings

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<sup>1</sup> The Examiner cites as evidence relied upon a text and a dictionary citation with respect to arguments advanced by Appellants that are not included in the sole ground of rejection (Answer 2, 3, and 5). Consideration of these documents is not necessary to our decision.

of Sawhney and Tanabe to one of ordinary skill in this art at the time the claimed invention was made. Accordingly, since a prima facie case of obviousness has been established by the Examiner, we again evaluate all of the evidence of obviousness and nonobviousness based on the record as a whole, giving due consideration to the weight of Appellants' arguments in the Brief. *See generally, In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

We agree with the Examiner's findings of fact from the references, conclusions of law based on this substantial evidence and response to Appellants' arguments as set forth in the Answer (Answer 3-8, to which we add the following for emphasis.

Appellants submit that Sawhney "teaches away from premature formation of the hydrogel, meaning formation of the hydrogel before it is at the body cavity," pointing to the disclosure at col. 3, l. 7 et seq., and argues that Sawhney makes clear the delivery of "two or more fluent prepolymer solutions without premature crosslinking" so as "to form a hydrogel implant in situ" in the abstract and at col. 1, ll. 8-10 (Br. 3, original emphasis deleted). In this respect, Appellants further point to the Sawhney illustrative FIG. 3 as described at col. 10, ll. 1-25, noting that the illustrated "delivery system 40" is there disclosed to additionally enable the prepolymer solutions to "be mixed and partially gelled before being deposited in the body lumen or void" (Br. 3, original emphasis deleted; Sawhney col. 10, ll. 15-16). Appellants argue that the Examiner's position that the "partially gelled" solution forms a "string-like" material is

unsupported, contending that the delivery device of Sawhney can provide “[a] glob of partially formed gel . . . and this is more likely what is taught” (Br. 3-4). Appellants further argue that one of ordinary skill in this art “reading Sawhney would not be motivated to provide a solid composition as taught by Tanabe since Sawhney . . . specifically teaches to not deliver a solid hydrogel” (*id.* 4, original emphasis deleted). We disagree.

We find no language in appealed claim 1 and in the written description in Appellants’ specification on which to read into the term “hydrogel” in that claim the limitation that the crosslinking reaction is complete at the time that the “hydrogel” is “extruded, that is, forced out, of the delivery device in the form of a “hydrogel string.” In our opinion, all that claim 1 requires is that the prepolymer material must be cross-linked to the extent that the material upon being forced out of the delivery device exhibits the properties of a hydrogel to any extent and is sufficiently cross-linked to maintain to any extent the form of a “string,” that is, a filament, at least upon extrusion. We find no limitation which states that the extruded material must remain in the “string” form indefinitely, and indeed, the claimed method would be practiced if the “string” existed for any period of time after extrusion.

We further find from the written description in the specification (specification 3-8) and from the disclosure in Sawhney (col. 3, ll. 15-22, col. 3, l. 55, to col. 7, l. 56, and col. 9, l. 55, to col. 10, l. 25) that both Appellants and the Sawhney use a delivery device with two lumens emptying into a mixing chamber for forming the same prepolymers and gelation initiators into an at least partially gelled, that is, partially

crosslinked, hydrogel material. Indeed, Sawhney would have disclosed that “[t]he partial gel extruded from the mixing chamber **46** through outlet ports **47** [of delivery system **40**] then may have sufficient mechanical integrity to remain in position in the body lumen or void during the chemical crosslinking process,” which would not have described any particular shape to one of ordinary skill in the art (col. 10, ll. 20-24 and **FIG. 3**). Thus, we determine that one of ordinary skill in this art routinely following the teachings of Sawhney would have reasonably arrived at the claimed method using the prepolymer and initiator of the reference in the delivery system **40** thereof as this person can determine the extent to which the hydrogel is crosslinked prior to extrusion to obtain the desired form under the circumstances in which the method is used. We find that Tanabe would have taught that the extrusion of a material which hardens on delivery from the same type of delivery device disclosed by Sawhney would assume the shape of the inside diameter of the outlet lumen (Tanabe col. 8, ll. 40-65, and **FIG. 3**).

Thus, the record contains substantial evidence supporting the position that the claimed method encompassed by appealed claim 1, as we have considered the limitations thereof, reasonably appears to be identical or substantially identical to the method of the combined teachings of Sawhney and Tanabe, even though Sawhney does not describe the partially gelled material extruded from the delivery device as being in the form of a hydrogel string. Thus the burden shifts to Appellants to submit effective argument and/or evidence to patentably distinguish the claimed method over the teachings of the references even though the ground of rejection is under

§ 103(a). *See, e.g., In re Best*, 562 F.2d 1252, 1255-56, 195 USPQ 430, 433-34 (CCPA 1977)(“Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. *See In re Ludtke*, [441 F.2d 660, 169 USPQ 563 (CCPA 1971)]. Whether the rejection is based on ‘inherency’ under 35 USC 102, on ‘prima facie obviousness’ under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products. [Footnote and citation omitted.]”); *In re Skoner*, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975) (“Appellants have chosen to describe their invention in terms of certain physical characteristics . . . . Merely choosing to describe their invention in this manner does not render patentable their method which is clearly obvious in view of [the reference]. [Citation omitted.]”); *cf. In re Spada*, 911 F.2d 705, 708-09, 15 USPQ2d 1655, 1657-58 (Fed. Cir. 1990) (“The Board held that the compositions claimed by Spada ‘appear to be identical’ to those described by Smith. While Spada criticizes the usage of the word ‘appear’, we think that it was reasonable for the PTO to infer that the polymerization by both Smith and Spada of identical monomers, employing the same or similar polymerization techniques, would produce polymers having the identical composition.”).

We do not find in Appellants’ arguments any explanation or evidence that Sawhney’s disclosure of a method in which the hydrogel forming

material is partially gelled upon extrusion teaches away from the claimed method encompassed by claim 1. *See generally, In re Kahn*, 441 F.3d 977, 985-89, 78 USPQ2d 1329, 1334-38 (Fed. Cir. 2006) (“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” (quoting *In re Gurley*, 27 F.3d 551, 553 [31 USPQ2d 1130, 1131], (Fed. Cir. 1994))); *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1145-46 (Fed. Cir. 2004) (prior art “disclosure does not criticize, discredit, or otherwise discourage the solution claimed”).

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Sawhney and Tanabe with Appellants’ countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 1 through 8 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Examiner’s decision is affirmed.

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Application 10/809,140

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2005).

AFFIRMED

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